Computing Sector

Project Charter

Build Service

Version 0.3

March20, 2014

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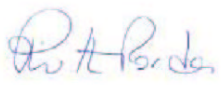
PREPARED BY:

Glenn Cooper/Steve Jones

CONCURRENCES:



5/20/2014

Ruth Pordes — Date

Project Sponsor

Charter Revision Log

Revision	Description	Effective Date
0.1	Initial draft by Glenn	3/11/14
0.2	Updated draft by Steve	3/12/14
0.3	Updated draft by Steve	3/20/14

Table of Contents

1. Project Purpose/Background

The purpose of this project is to design and implement a system for regular (nightly or other experiment-level) software builds by Frontier experiments and related software providers at Fermilab.

Presently, many software packages are built (on a nightly basis) on interactive nodes. While this is easy to set up, the builds take a long time—up to many hours. Limitations include I/O bandwidth, e.g., from use of network-attached storage, such as NFS or AFS; and a limited number of processors/cores, which limits parallelism in the build process.

Individual users building code for their own analyses face similar problems, long compile and link times, probably for the same reasons.

A related problem is that the build process is not well integrated with code distribution, including CVMFS.

The build system architecture from this project should enable greatly reduced build times: tens of minutes or less, rather than hours. The system should be reasonably easy for experiment developers and software librarians to use; affordable within expected budget constraints; and maintainable without undue expense or administration effort.

2. Project Scope

The scope is to design and implement a build system that allows timely and reliable software builds for Frontier experiments and related software providers at Fermilab. This will follow several phases:

1. Architecture design
2. Development of implementation details
3. Hardware acquisition (if required)
4. Configuration and deployment
5. Production operations

As part of the design process, the project should consider approaches used by other HEP experiments or elsewhere. Consider options such as virtualization of each build environment; batch systems vs. software integration applications for scheduling.

Specifications should include hardware; a way to schedule multiple builds (SLF5, SLF6, optimized, etc.) for multiple experiments, including validation and unit tests; and a way to get source code to the build system and the results out from the build system. They should also describe the process for allocating build system resources and scheduling builds.

The initial scope does not include a facility for individual users. That could be considered in a later project, or an extended phase of this one.

3. Project Objectives

The objective is to provide a robust and timely build service.

4. Project Deliverables

The project will deliver:

1. Build service architecture
2. Overall design of the build service:
    a. Hardware elements

   b. Recommendations for mechanisms to schedule builds: software package, batch system, etc.
3. Hardware procurement and installation (if new hardware is required)
4. Build system configuration and testing
5. Deploy framework for supervision and administration of the build service

5. Project Customers

- FNAL Intensity Frontier experiments
- FNAL Cosmic Frontier experiments
- FNAL Scientific Computing Division

6. Project Stakeholders

- Experiment software developers and librarians
- FNAL Scientific Computing Division

7. Project Time Frame

Deliver architecture draft by end of March 2014

Choose platform by end of March 2014

Set up framework in dev and test enviroments by end of April 2014

Test framework builds by early May 2014

Go live by end of May 2014 for LBNE, June 2014 for LArSoft and g-2

8. Project Budget

At this time, we do not believe project budget tracking is necessary.

CS Activity Name:	SCIENTIFIC COMPUTING SYSTEMS / Project / FIFE Build Service		
FTL Identifier:			
Task Code:			
	FY2014	**FY2015**	**Total**
Personnel (FTE-yrs)			
M&S ($K)			

9. Project Acceptance Criteria

This project will be considered complete when the following phases have been completed:

Phase 1: Delivery of an architecture and requirements document approved by the committee

Phase 2: Delivery of detailed plan to implement the architecture

Phase 3: Hardware acquisition, if any, complete

Phase 4: Hardware burn-in, configuration, acceptance complete

Phase 5: Regular builds using the service; administrative framework in place to allocate build slots

10. Flexibility Matrix

	Most Critical (Inflexible)	***Moderately Critical (Adaptable / Negotiable)***	***Least Critical (Accepting / Will Concede)***
SCOPE	X		
SCHEDULE			X
RESOURCES		X	

11. Project Organization

11.1. Project Team

Project Sponsor: Stu Fuess

Project Manager: Steve Jones

Technical Lead: Glenn Cooper

Service Owner: Scientific Computing Systems

Responsible for: Understanding whether service meets the customers needs; Gathering requirements; Getting agreements on the expectations; making sure that the TSWs have the right information in. Becomes ITIL'd shepherding/writing the ITIL sections. Aggregate things so that not everyone who provides something is a Service Owner. Goes with CVMFS.(?)

Not responsible for: System (FEF)

Proejct Team Names	**Project Team Roles**
Steve Jones	Project Manager
Glenn Cooper	Architect/ Project Technical Lead
Ed Simmons	Assistant Technical Lead
Liz Sexton-Kennedy	Assistant Technical Lead
Marc Mengel	Developer
Patrick Gartung	Developer
Seth Graham	Developer

Steering Committee: FIFE Project

11.2. Responsibilities

The Project Sponsor is responsible for obtaining organizational support and commitment of resources to the project; setting scope and providing guidance to the Project Manager and Project Lead; and addressing obstacles, issues and concerns. The project sponsor is also responsible for evaluating the success of the project.

The Project Manager is responsible for the project achieving its objectives. The Project Manager is primarily responsible for:

- Preparing and maintaining project management artifacts such as the charter, budget, schedule, status reports, and lessons learned.
- Coordinating project work activities with the Project Lead
- Monitoring and reporting on progress against plans. This also includes:
    - Developing the project management plan and all related component plans;
    - Keeping the project on track in terms of schedule and budget
    - Managing project scope, including overseeing Project Change Control
    - Identifying, monitoring, and responding to risk
    - Providing accurate and timely reporting of project metrics.
- Helping the project lead with communications related to the project

The Project Lead directs the technical work necessary to design, develop, implement, test, and deliver a product, system or service that achieves the project's objectives. The Project Lead is primarily responsible for:

- Technical requirements, specifications, and design documentation
- Insuring that the technical design meets the technical requirements and specifications
- Service Management topics, including ITSM Service Design and Change Management, working with the service owner.
- Technical decisions in the project
- Directing the technical work performed by the project team
- The project achieving its objectives
- Non-technical requirements and specifications, and related non-technical documentation
- Non-technical decisions in the project
- Coordinating communications on the project.

Project Team members are responsible for:

- Reviewing and understanding the tasks assigned to them
- Meeting the due dates of tasks as assigned
- Communicating the status of assigned items
- Communicating any issues that have a potential to impact progress

The Steering Committee is responsible for monitoring the progress of the project; assisting in the resolution of risks, issues and concerns, and providing guidance and advice to the Project Sponsor and Project Manager.

12. Project Reports

The Project Manager will report status to the Project Sponsor(s) via monthly written status reports. Status meetings will be arranged on an as-needed basis. The Project Manager will report at the Computing Projects Status meeting on Tuesdays on a monthly basis.

The Project Team will meet on a weekly basis to discuss project status, review progress against milestones and deliverables, and discuss risks, issues and concerns.

The Steering Committee will meet on a bi-weekly basis to review project progress and risks, and address issues and concerns.